ACTA HISTOCHEMICA ET CYTOCHEMICA

Official Journal of the Japan Society of Histochemistry and Cytochemistry

Volume 15

Kyoto

1982

Published bimonthly by
the Japan Society of Histochemistry and Cytochemistry

Acta histochem. cytochem.

ACHCBO

COPYRIGHT ©, THE JAPAN SOCIETY OF HISTOCHEMISTRY
AND CYTOCHEMISTRY

TABLE OF CONTENTS VOLUME 15, 1982

Nos. 1 & 2, 1982

Dedicated to Professor Tadao Takeuchi in Memory of His Retirement

TERUO IWAMASA. Biography of Professor Tadao Takeuchi 1

MASAYA ARAKI. On the Retirement of Prof. Tadao Tekauchi 4

MIDORI TOIBANA, ISAMU TSUKAHARA AND KAZUO OGAWA. Cytochemical demonstration of Guanylate Cyclase Activity in Retinal Photoreceptors with Special Reference to Changes under Light and Dark Adaptation 5

YASUHIRO SAKAI, KOUSUKE CHIDA AND KENJIRO YASUDA. Localization of Energy Metabolism-Related Oxidoreductases in the Testis 21

TOSHIKAZU UCHIDA, SHISAHIRO MIYATA AND TOSHIO SHIKATA. Effect of Various Fixatives on Staining of Alkaline Phosphatase and Gamma-Glutamyl Transpeptidase Activities of Human Livers 31

SHINICHI OHNO, YASUHISA FUJII, NOBUTERU USUDA, FUSAYOSHI MURATA AND TETSUJI NAGATA. Peroxisomal Proliferation in Rat Kidney Induced with DEHP I. Numerical Change by Light Microscopic Morphometry 40

MACHIKO IMAIZUMI AND TOSHISUKE HIRAOKA. Cytochemical Study of Tetrazolium Reduction by Isolated *Vicia* Chloroplasts under Illumination 58

MICHIMASA KATOH, MASAMITSU KANAI, MITSUAKI KAMEKO, SHINICHI OHNO, YASUHISA FUJII AND TETSUJI NAGATA. Localization of Retinol-Binding Protein and Prealbumin in the Human Kidney with an Unlabeled Enzyme Immunohistochemical Method 68

HARUMICHI SEGUCHI, TERUHIKO OKADA AND KAZUO OGAWA. Localization of Ca^{++}-Activated Adenosine Triphosphatase Activities in the Transitional Epithelium of the Rabbit Urinary Bladder 76

YUKARI TAKAHASHI, TOSHIMI MIZUNUMA AND YASUO KISHINO. Ultracytochemical Studies on Fat Absorption by Choline-Deficient Rats 90

TAKAYOSHI TOBE, AKIRA YAMAHIRO, TADAO MANABE, MASATO NOGUCHI, KENICHI AKAJI AND HARUAKI YAJIMA. Gastrin Releasing Peptide (GRP) in the Human Stomach 102

SHINSUKE KANAMURA, KAZUO KANAI AND MARI ASADA-KUBOTA. Cytochemical Localization of Glucose 6-Phosphatase Activity in Membranes of the Endoplasmic Reticulum and Nuclear Envelope in Mouse Hepatocytes 108

MASAMI YOSHIDA, IKUKO NAGATSU, YUKARI KONDO, NOBUYUKI KARASAWA, MARIA SPATZ AND TOSHIHARU NAGATSU. Immunohistochemical Localization of Catecholamine-Synthesizing Enzymes and Serotonin in the Bat Brain 116

KUNIAKI TAKATA, FUMIAKI NISHIYAMA AND HIROSHI HIRANO. The Endocytosis and the Intracellular Fate of Cationized Ferritin in Monkey Macrophages 129

NOBORU YAMAMOTO. Electron Microscopic Analysis of Sugar Residues of Glycoproteins in the Acrosomes of Spermatids Using Various Lectins 139

TOSHISUKE HIRAOKA. Dry Mass Distribution Among Interphase Nuclei of *Tradescantia* as Determined by X-Ray Microradiography and Microinterferometry 151

KOHJI AIHARA, HIROSHI NAGURA, SHINICHI YOSHIMURA, HIDEAKI HASEGAWA AND KEIICHI WATANABE. Immunocytochemical and Enzyme-Cytochemical Localization of Intestinal Alkaline Phosphatase of Rats 163

NOBUYUKI SHIRAISHI, TETSUO FUJIHARA, SAKAN MAEDA, TESUNEHIKO KAZAMA, REI TAKAHASHI AND TAKETOSHI SUGIYAMA. Chromosome Structure of Normal Long-Evans Rats Revealed by Modified Giemsa Method for DNA Replication 176

SOTOKICHI MORII, SHIGERU TAKIGAMI, YOSHIMASA KANEDA AND NOBUAKI SHIKATA. Ultracytochemical Analysis of Cytoplasmic Lipids by Enzymic Digestive Methods 185
TERUO IWAMASA, SEIJI FUKUDA, TETSUO HAMADA AND NOBUYUKI NINOMIYA. Purification and Immunohistochemistry of Fetal Acid α-Glucosidase 198
MACHIKO IMAIZUMI AND TOSHISUKE HIRAOKA. Cytochemical Study of Diaminobenzidine Oxidation by Isolated *Vicia* Chloroplasts under Illumination 208
MASAHIKO KOTANI AND YUKIFUMI NAWA. Demonstration of Hydrolytic Enzymes in the Clastic Cells of Hassall's Corpuscles in the Guinea-Pig Thymus 223
YOSHIKO NAKAE, HIROSHI ISHIZUKA, HAYASHI MATSUMOTO AND SHIGERU KATSURA. Quantitative Estimation of Sulfhydryl Groups in Muscle Fibers Classified by Succinate Dehydrogenase 228
KOUSUKE CHIDA, YASUHIRO SAKAI AND KENJIRO YASUDA. Localization of Sorbitol Dehydrogenase in the Mouse Accessory Reproductive Organs 235
MASASUKE ARAKI, CHIZUKA IDE AND TAKUMA SAITO. Ultrastructural Localization of Acetylcholinesterase Activity in the Developing Chick Retina 242
HARUHIKO MIYAYAMA, MASATAKA TAKEMIYA, SHOICHI KATSURAGI AND TADAO TAKEUCHI. Histochemical Observations of Glycogen Synthetase Activity using GDPG and TDPG as Substrates in Rat Skeletal Muscle Fibers....256
HIROSHI KAWASAKI, TOSHIRO NAKASHIMA, HIDEHIKO TANAKA, SHIGEYUKI TERADA AND EIJI KIMOTO. Histochemical and Electron Spin Resonance Study of Serum Metalloproteins in DAB Hepatoma 270
MASAYA MATSUSHITA, TAKUMA SAITO, HIROMI KEINO, YOSHITADA FURUHARA, SYOGO ABE AND KAZUO OGAWA. Autophagy of Peroxisomes in Hepatic Parenchymal Cells 277
HISAO FUJITA, KAZUNORI ISHIMURA, HIROSHI MATSUDA AND TADANOBU BAN. Freeze-Fracture Images of Distribution of Filipin-Cholesterol Complexes in Secretory Cells of the Anterior Pituitary and Adrenal Medulla of Mice 284
REVIEW: R. YOSHIYUKI OSAMURA AND PAUL K. NAKANE. Functional Differentiation of Cells in the Anterior and Intermediate Pituitary Glands —Immunohistochemical Studies— 294
ANNOUNCEMENTS 310

No. 3, 1982

HIROKO YOKOTA AND KAZUO OGAWA. Effect of Hemodynamic Factors in Renal Glomerulus II. Cytochemistry of Glomerular Basement Membrane and Mesangium in the Experimental Congestive Kidney 313
KAZUSHI FUJIMOTO AND KAZUO OGAWA. Enzyme Cytochemical Study of Rat Cardiac Muscle I. Adenylate Cyclase and Guanylate Cyclase 325
KAZUSHI FUJIMOTO AND KAZUO OGAWA. Enzyme Cytochemical Study of Rat Cardiac Muscle II. Ca^{++}-ATPase and Ouabain-Sensitive, K^{+}-Dependent *p*-Nitrophenylphosphatase 338
MARI NAKAHARA, HAJIME SUGIHARA, SHINICHI MIYABARA, KAZUHIRO OOTA AND KANKATSU YUN. Lipid and Enzyme Histochemistry in Differentiation of the Fetal Adrenal Cortex in the Rat 355
ATSUSHI SUZUKI, TAKESHI TSUCHIYA AND HIDEO TAMATE. Histochemical Properties of Myofiber Types in Thigh Muscles of the Chicken 362
YOSHIMARO ISHIKAWA, KEI-ICHI HIRAI AND KAZUO OGAWA. Postnatal Changes in the Localization of Small Intestinal NAD(P)H-Dependent H_2O_2-Generating Enzyme Activity in the Rat 372

Yoshimaro ISHIKAWA, Kei-ichi HIRAI and Kazuo OGAWA. Regional Differences of an NAD(P)H-Dependent H_2O_2-Generating Enzyme Activity in the Rat Small Intestine 379
Kazuto SHIGEMATSU. Comparative Studies between Hormone Contents and Morphological Appearances in Human Adrenal Cortex—Special Reference to Non-Functioning Tumors (Adenoma and Adenomatous Nodule) and Functioning Adenoma— 386
Osamu MORI. DNA Cytofluorometry of Bone and Soft Part Tumors 401
Toshitaka AKISAKA, Ichiji IMANISHI and Hiroshi INOUE. Electron Microscopic Observation of Embryonic Meckel's Cartilage by Osmium Impregnation Method 411
Hiroshi MAYAHARA, Takao ANDO, Yoshimaro ISHIKAWA and Kazuo OGAWA. Ultracytochemical Study of the Ouabain-Sensitive, K-Dependent *p*-Nitrophenylphosphatase (Na-K-ATPase) Activity in the Developing Rat Kidney 421
Twenty-second Annual Meeting of the Japan Society of Histochemistry and Cytochemistry, Tokyo, November 16-17, 1981
Abstracts of General Session.....439
ANNOUNCEMENTS.....435

No. 4, 1982

Shinichi MORIYAMA, Norio HIROTA and Takeshi YOKOYAMA. Histochemical Demonstration of Gamma-Glutamyl Transpeptidase (GGT) Activity in Thyroid Tissues 489
Masahisa SHIMADA, Tetsuhide H. MURAKAMI, Akitaka DOI, Shogo ABE, Tomotoshi OKAICHI and Masahito WATANABE. A Morphological and Histochemical Study on Gill Primary Lamellae of the Teleost, *Seriola quinqueradiata*, Exposed to Sea Bloom 497
Kazuto NOKUBI, Toshiki BABA, Mayumi KITSUKAWA and Hiroaki IGARASHI. Ontogeny and Localization of γ-Crystallins in the Developing Rat Lens—Comparison with Elemental Analytical Finding by Energy Dispersion-Type Electron Probe Microanalyzer 508
Keisuke SHIMIZU, Haruo KINOSHITA, Toshiharu YAMAMOTO, Hiroshi KIMURA and Junzo OCHI. Silver Impregnation and Fluorescence Histochemistry of the Subependymal Cells in the Preoptic Recess of the Bullfrog (*Rana Catesbeiana*) 520
Shigeru KATSURA, Hiroshi ISHIZUKA, Hayashi MATSUMOTO and Yoshiko NAKAE. Histochemical Studies on the Architecture of Rat Masseter Muscle 527
Reiko YOKOTA, Chizuka IDE, Tohru NITATORI and Satoru ONODERA. Cholinesterase Activity in the Carotid Sinus Baroreceptor 537
Twenty-second Annual Meeting of the Japan Society of Histochemistry and Cytochemistry, Tokyo, November 16–17, 1981
Special Address
Takuzo ODA. The Molecular Cytochemistry of Chromatin 543
Symposium: Histochemical Approaches to the Receptors
Ryohei OKAMOTO and Yoshihisa IMAMURA. Interaction of Estrogens or Antiestrogen with Estrogen Receptor in the Rat Uterus 554
Walter E. STUMPF and Madhabananda SAR. Histochemical Approaches for the Localization of Steroid Hormone Receptors 560
Vinci MIZUHIRA, Michiko SHIIHASHI and Yoshie SUGIURA. Demonstration of Receptor Sites with Electron Microscope Autoradiography—Distribution of Receptors for Estradiol and its Ligands in the Mouse and Rat Uteri— 572
Yuji ISHIKAWA and Yutaka SHIMADA. Staining of Acetylcholine Receptors at the Adult Mouse and Embryonic Chick Neuromuscular Junctions Using Erabutoxin B and the Antibody Against Acetylcholine Receptors 583

NORIKAZU TAMAOKI, SHINICHI YOSHIMURA AND AKIRA AKATSUKA. Histochemistry of Bungarotoxin Binding Sites at Electron Microscopic Level 592
YASUYOSHI ARIMATSU. Quantitative Light Microscopic Autoradiography for α-Bungarotoxin Binding Capacity in the Mouse Brain.....600
EIKO ITOGA, SHOZO KITO, YAYOI NAKAMURA, MASANORI TOGO AND TAKENOBU KISHIDA. Morphological Study on γ-Aminobutyric Acid and Met-Enkephalin Receptors in the Rat Brain 608
HIDENORI SUZUKI AND VINCI MIZUHIRA. Three-Dimensional Observation of the Radioactive Concanavalin A Receptors on the Surface of Human Red Blood Corpuscles Utilizing Scanning Electron Microscope Autoradiography 624

No. 5, 1982

TERUHIKO OKADA, HARUMICHI SEGUCHI AND KAZUO OGAWA. Acid Phosphatase Activities in the Transitional Epithelium of Canine Urinary Bladder 639
KANJI KASAI, SONG SUNG SHIK AND YOSHINOBU YOSHIDA. Prolactin Synthesis and Trophoblastic Differentiation in Metastatic Choriocarcinoma in the Liver 648
KEITH N. CHRISTIE AND PETER J. STOWARD. The Cytochemical Reactivity of Cerium Ions with Cardiac Muscle 656
SAKAE MURAKAMI. A Modified Method for Light and Electron Microscopical Enzyme-Histochemistry Using JB-4 Sections 673
KUNIAKI FUKUDA, HIDEYO SHINDO, KAZUO YAMASHITA AND VINCI MIZUHIRA. Catalase Activity of Erythrocytes from Beagle Dogs: An Appearance of Hereditary Acatalasemia 685
AKIRA KASHIBA, HISASHI HASHIMOTO, HIROSHI KIMURA AND TOSHIRO MAEDA. Postnatal Alterations in Noradrenaline Nerve Terminals in the Periventricular Hypothalamus of the Rat 691
SHIGERU KATSURA, HIROSHI ISHIZUKA, HAYASHI MATSUMOTO AND YOSHIKO NAKAE. Histochemical Studies on the Histogenesis of Rat Medial Pterygoid Muscle.....701
Letter to the Editor:
YUJI MIZUKAMI AND FUJITSUGU MATSUBARA. Isoelectric Focusing Patterns of Acid α-Naphthyl Acetate Esterase in Tissues of Human Thyroid 710
ANNOUNCEMENT 714

No. 6, 1982

TAKASHI KUWAHARA, HIROSHI MAYAHARA, CHUICHI KAWAI AND KAZUO OGAWA. Histochemical Study on the Ouabain-Sensitive, Potassium-Dependent *p*-Nitrophenylphosphatase Activity along the Nephron in Several Mammals 717
AKIRA KASHIBA AND HIROSHI KIMURA. Alterations in Noradrenaline Nerve Terminals in the Periventricular Hypothalamus of the Rat during Regeneration after Administration of 6-OH Dopamine 734
AKIO TOMINAGA. Peroxidatic Activity of Catalase in the Sea Urchin Ovary 746
KOROKU NEGISHI, SATORU KATO AND TSUNENOBU TERANISHI. Dopaminergic Cells of the River Lamprey Retina Revealed by a Histofluorescence Study 757
KOROKU NEGISHI, TSUNENOBU TERANISHI AND SATORU KATO. Neurotoxic Destruction of Dopaminergic Cells in the Carp Retina Revealed by a Histofluorescence Study 768

Chimori KONAKA, Gert AUER, Magnus NASIELL, Yoshihiro HAYATA, Harubumi KATO, Torbjörn CASPERSSON and Jutaro ONO. Sequential Cytomorphological and Cytochemical Changes during Development of Bronchial Carcinoma in Beagle Dogs Exposed to 20-Methylcholanthrene 779
Harumichi IMAI, Hiroshi KIMURA and Toshihiro MAEDA. A Stable and Simple Method of "FAGLUPAGAS Fixation" for Catecholamines for Routine Examination 798
Detlef BISCHOFF, Hans LUPPA and Jörg ANDRÄ. Postnatal Development of Acetylcholinesterase in Selected Rat Brain Regions I. Behaviour of Its Multiple Forms in the Medial Septal Nucleus and Hippocampus 807
Takao ANDO, Hiroshi MAYAHARA, Kazushi FUJIMOTO, Hiroaki MIYAJIMA and Kazuo OGAWA. Ultracytochemical Localization of Ca^{2+}-ATPase Activity on the Epithelial Cells of Rat Trachea 812
Masami YOSHIDA, Ikuko NAGATSU, Nobuyuki KARASAWA, Yukari KONDO, Terumi OHNO and Toshiharu NAGATSU. Immunohistocytochemical Localization of Tyrosine Hydroxylase and Serotonin in the Brains of Golden Hamster 827
Announcement 842
Author Index 845
Subject Index 847